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CLEARWATER NATIONAL FOREST

CHECK SURVEY
1939

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ANALYSIS OF 1939 SURVEY DATA

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CLEARWATER NATIONAL FOREST

CHECK SURVEY

1939

During the 1938 season the Clearwater National Forest and privately owned lands adjacent were covered by an intensive bark beetle survey. The data obtained from this survey revealed a severe infestation of the mountain pine beetle within the white pine stands of the Tepee and Sheep Creek areas, a territory that included both privately and publicly owned lands. Control measures were recommended, and with funds provided by both agencies the project was instituted in May 1939 and completed on June 10, with approximately 3,000 trees being treated at a total cost of \$21,973.

To determine the benefits derived from this operation as well as the need for maintenance work during the present season, these areas as well as one or two other questionable ones were resurveyed during the week of August 21, 1939. The results of this check survey are shown in the following tabulations:

SHEEP MOUNTAIN UNIT

2,880 Acres

No. of strips	Acres of strip	Trees on strip		Trees per acre of strip	
		New attacks	Green trees	New attacks	Green trees
5	146	43	6,393	.295	43.7

Percent of total stand killed: .7%

Total number infested trees for unit: 850

Although there are some 850 - 1939-attacked trees estimated

for this area, it is believed that the data obtained have indicated a figure that is considerably high. Aside from a strip along the road in lower Sheep Mountain Creek the greater portion of the area has but .212 infested tree per acre, which would place the estimate at some 650 trees. (The 1938 estimate was 1.026 per acre.) The infested trees along the lower portion of Sheep Mountain Creek, of which there are about 50, no doubt came in from the adjacent area of privately owned land. The timber within this area is now being logged, which will probably have a beneficial influence upon the infestation within this unit.

Most of the attacked trees recorded on the sample strips were found near the burned log decks of last springs control operation. Many of these attacks were one-sided, although a few heavily attacked trees were recorded.

TEPEE CREEK (C.N.F.) UNIT

1,280 Acres

Strip No.	Acres of strip	Trees on strip		Trees per acre of strip	
		New attacks	Green trees	New Attacks	Green trees
2	62	12	1,822	.193	29.3

Percent of total stand killed: .7

Total number infested trees for unit: 247

This area shows a reduction from last years infestation, with the infested trees being lightly attacked. Many of the trees recorded were adjacent to burned log decks, where the heat apparently injured the tree, making it attractive to the attacks of this insect. Those attacks are often one-sided and in many instances are entirely or

partially pitched out.

TEPEE CREEK (C.T.P.A.) UNIT

680 Acres

Strip No.	Acres of strip	Trees on strip		Trees per acre of strip	
		New attacks	Green trees	New attacks	Green trees
2	40	7	1,135	.175	28.3

Percent of total stand killed: .6%

Total number infested trees for unit: 112

A large number of the attacked trees recorded in this unit were also found near the burned log decks. These trees were usually quite lightly attacked. A reduction from 1.7 infested trees per acre occurred.

SILVER CREEK (C.T.P.A.) UNIT

Strip No.	Acres of strip	Trees on strip		Trees per acre of strip	
		New attacks	Green trees	New attacks	Green trees
3	74	3	2,111	.04	28.5

Percent of total stand killed: .14%

During the 1938 insect survey of the Clearwater Forest and C.T.P.A. areas, a small area of infestation on Silver Creek in the Headquarters unit of the Association was recorded. Although at that time it was not considered as being serious, it was thought advisable to recheck the area in 1939. Accordingly during the recent survey of the Tepee and Sheep Mountain areas, three man-days were given to a resurvey of the Silver creek drainage.

The data obtained indicate a natural reduction in the severity of the infestation. A few small groups of infested trees were recorded, but for the entire area more 1938 attacks were encountered than those of the present season.

WASHINGTON CREEK (C.T.P.A.) UNIT

200 Acres

Strip No.	Acres of strip	Trees on strip		Trees per acre of strip	
		New attacks	Green trees	New attacks	Green trees
1	20	6	500	.30	25

Percent of total stand killed: 1.2%

Total number infested trees for unit: 60

The data obtained from this small area indicated an infestation of nearly one-third of a tree per acre. Although the loss is occurring in a heavily stocked timber stand, it does constitute a threat to adjacent areas.

CEDARS UNIT

An examination was made along the 9 miles of the Black Canyon road below the Cedars station. Many infested trees have been cut and thrown into the river. An actual count of 37 standing infested trees was made. Although the number is not great, it is possible that these trees should be treated as a protective measure to the surrounding stands. In all probability there are about 50 trees that should be treated.

ANALYSIS OF 1939 SURVEY DATA

James C. Evenden
Senior Entomologist

The following tabulation presents the present status of the mountain pine beetle infestation within the 1939 control areas of the Clearwater National Forest and adjacent privately owned lands, in comparison with that of the 1938 season.

SUMMARY OF 1938 AND 1939 SURVEY DATA

Name of Unit	Acres	Infested trees		Total infested		Change in status
		per acre		trees per unit		
		1938	1939	1938	1939	
Sheep Mountain	2,880	1.026	.29	2954	850	-71%
Tepee Cr. (C.N.F.)	1,280	.780	.19	998	287	-71%
Tepee Cr. (C.T.P.A.)	640	.57	.17	365	112	-69%
Silver Cr. (C.T.P.A.)		-	.04	-	-	-
Washington Cr. (C.T.P.A.)	200	-	.30	-	60	-

The preceding tabulation indicates a satisfactory reduction in the number of infested trees upon the three areas covered by control in May and June. This comparison of losses is based upon the survey data for the two seasons. As the actual number of trees treated was somewhat lower than the 1938 estimate, a comparison between the 1938 - attacked trees actually treated and the 1939 infestation would show a somewhat smaller reduction. However, as the two surveys were

as comparable in method of application and area covered, with the same potential error of estimate occurring in both sets of data, their comparison is considered as a more accurate figure of reduction.

As the 1939 attack period of the mountain pine beetle was not over at the time this survey was completed, it is necessary to correct the estimate of new attacks to a degree that will compensate for subsequent attacks. Data taken during the course of the survey indicate the necessity of applying a correction factor of 15%, which would reduce the percentage of reduction to the following.

Sheep Mountain from	-71%	to	-66%
Tepee Creek (C.N.F.)	-71%	to	-66%
Tepee Creek (C.T.P.A.)	-69%	to	-64%

This percentage of reduction is based upon numbers of attacked trees. Due to the difference in the severity of the attacks between the two seasons, it can be conservatively estimated that the insect population was reduced by at least 90%.

It is interesting to note that in all areas the newly attacked trees are for the most part adjacent to the burned log decks of last spring's control operation. These attacks are usually light, being confined to the scorched heat-injured side of the tree, and in many instances the attacking beetles were pitched out entirely. The occurrence of these attacks around the burned decks does not necessarily mean that the work had been improperly performed and that some of the beetles were not destroyed, although in some instances that may have been true. It does indicate however that the insects left within the unit, as well as the influx from untreated areas adjacent, were attracted to the injured trees. Greater care must be exercised in preventing such injury, as heat alone will destroy the cambium of

thin-barked white pine. The entomological significance of beetle attack within such injured trees is that a few insects can make a successful attack and produce large broods. Such light attacks are nearly always pitched out by healthy trees.

In view of the rather successful reduction in the severity of the infestation, as well as the character of the 1939 attacks, no follow-up control is considered necessary for these areas. There is one small area south of the Tepee creek unit within the privately owned lands protected by the Clearwater Protective Timber Association, where the infestation warrants consideration. On an area of approximately 200 acres, lying to the south of the road in section 30, there is an infestation of .30 infested tree per acre, or a total of 60 infested trees, which is slightly more than 1% of the merchantable white pine stand. It is recommended that these trees be treated during the present season. The attacks are quite heavy and the resulting brood large. The treatment of these few trees would eliminate a potential source of danger to the timber stands of the area, which would also threaten the adjacent areas.